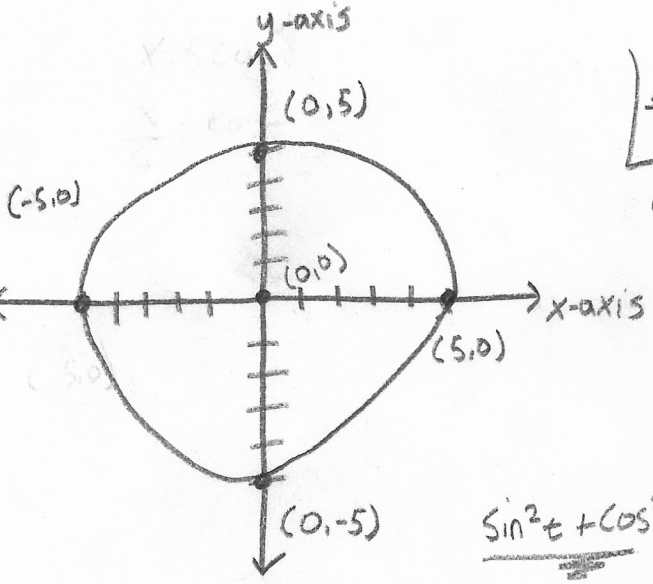
Math 213 Spring 2020 Name: Colin Morris-Moncada

Quiz 1

In your sketches, label all intersection points with the x- and y-axes.

1. Sketch the parametrized curve by first **eliminating the parameter**:

$$x = 5\cos t, y = 5\sin t, \quad 0 \le t \le 2\pi$$



$\frac{x^2}{5^2} + \frac{y^2}{5^2} = 1$

CIRCLE @ origin

t	$x = 5\cos t$	$y = 5\sin t$
0	5	0
$\frac{\pi}{2}$	0	5
π	-5	0
$\frac{3\pi}{2}$	0	-5

$x = 5\cos t$ $\quad$ $y = 5\sin t$

$\frac{x}{5} = \cos t$ $\quad$ $\frac{y}{5} = \sin t$

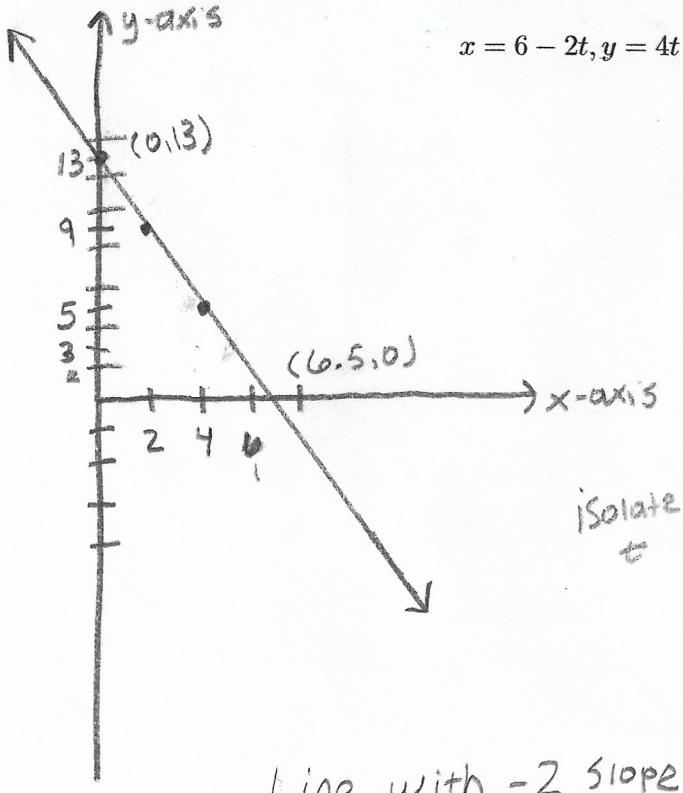
$\left(\frac{x}{5}\right)^2 = \cos^2 t$ $\quad$ $\left(\frac{y}{5}\right)^2 = \sin^2 t$

$\sin^2 t + \cos^2 t = 1$

equation used

2. Sketch the parametrized curve by any method, but show your work:

$$x = 6 - 2t, y = 4t + 1$$



t	$x = 6 - 2t$	$y = 4t + 1$
1	4	5
2	2	9
3	0	13

Isolate t:

$x = 6 - 2t$

$x - 6 = -2t$

$\frac{x-6}{-2} = t$

eliminate t

$y = 4t + 1$

$y = 4\left(\frac{1}{-2}(x-6)\right) + 1$

$y = 4\left(\frac{x}{-2} + \frac{6}{2}\right) + 1$

$y = \frac{4x}{-2} + \frac{24}{2} + 1$

$y = -2x + \frac{24}{2} + \frac{2}{2}$

$\frac{y = -2x + \frac{26}{2}}{y = -2x + 13}$

Line with -2 slope